ABSTRACT OF THE DISCLOSURE

An initial set of individuals having design parameters of a blade as a gene, is determined at random (S12). Next, an analysis using Navier-Stokes equations is performed. On the basis of the analysis result, ranking (evaluation) of respective individuals are performed using a pressure loss coefficient, a trailing edge deviation angle and the like as objective functions (S14). When a shape of a blade having a desirable performance is obtained, or when a predetermined number of generations is achieved, the analysis is terminated assuming that a termination condition has been met (S22). When the termination condition has not been met, processes about individual selection, crossing between individuals and mutation are performed so that generation is incremented by 1. The above processes are repeated, so that Pareto solutions can be obtained according to MOGA in consideration of a trade-off relationship between the objective functions.

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